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each arm carrying a respective brush body, said brush bodies being arranged for contacting a generally cylindrical commutator of the motor, the commutator having a plurality of circumferential segments and the first and second brush bodies being capable of contacting a single one of said segments simultaneously when the assembly is mounted in the motor, each arm in combination with the respective brush body thereof having a different respective natural resonance frequency of oscillation.

REMARKS

The undersigned hereby petitions for a one-month extension of time. The fee may be charged to our Deposit Account No. 15-0700.

In response to an objection to the drawings, an objection to a proposed drawing correction, and to a rejection under 35 U.S.C. § 112, paragraph 1, claims 50, 74 and 81-92 are being canceled. However, the cancellation of these claims is considered to be without prejudice, merely to expedite the allowance of the remaining claims, for the following reasons.

Claims 48, 51-58, 60-69, 72 and 75-79 are now pending.

In addition, a new claim 93 is being filed which is similar, for example, to original claim 43 as filed February 6, 1998.

The subject matter of claim 93 and the other claims is submitted to be patentable over the prior art.

The invention is a significant advance over prior brush assemblies, including those cited by the Examiner.

It has a particular application to low voltage (e.g., 6-24V) high current (e.g., 30A+) D.C. motors as used in battery powered hand operated tools (e.g., drills and sanders). For such appliances, the motors need to be very robust because of the nature of the appliance. They also need to be inexpensive because competition between manufacturers (appliance and motor) is very keen in this market segment. As a result of this, the physical size, cost and durability of the motor driving these appliances, are very important.

When looking at durability, the brush/commutator combination usually determines the life expectancy of the motor.